

AMENDMENTS TO THE SPECIFICATION

- I. Please replace the TITLE on page 1, the line numbered 1, with the following amended TITLE:

~~CABLE-FIXED~~ RETRACTABLE HORN CLEAT DEVICE

- II. Please replace the entire SPECIFICATION, beginning on page 1, line 3, and ending on page 10, line 4, with the following amended SPECIFICATION:

BACKGROUND OF THE INVENTION

1. Field of the Invention:

The present invention ~~relates~~ is directed to nautical hardware, and more particularly to a cable-fixed nautical holdfast device ~~devices~~ and, even more particularly, to a movable-hidden-cable-fixed retractable horn cleat device that does not occupy space can be stowed flush with a deck or other surface upon which it is mounted when not in use.

2. Description of the Related Art:

~~cable-fixed~~ Horn cleats devices are usually ~~distributed at the periphery in~~ positioned peripherally on a deck, generally in proximity to the ship's gunwales, ~~a boat and are fixed on a deck of a boat body.~~ They are used to fix

secure cargo and other objects on board the boat or and are also adapted to
belay hawsers used to tie cables when the boat is berthed at a dock.

As shown in FIG. 1, a conventional horn cleat structure for a boat comprises a transverse rod 10 and two vertical rods 12 connected below the transverse rod 10. The transverse rod 10 is often fixedly ~~locked onto~~ secured both to the two vertical rods 12 and to a boat deck 16 with two screw bolts 14 passing through the two vertical rods 12, and is provided for cable tying.

When cleats are used to ~~fix~~ lash down cargo, the ~~cable line~~ line is wound around the cargo, and ~~the~~ two ends of the ~~cable line~~ line are ~~fixed at~~ belayed respectively to the two vertical rods of different cleats, thereby fixing substantially immobilizing the cargo and preventing the cargo from easily loosening, shifting weight, or otherwise or moving. When the ~~boat ship~~ ship is ~~berthed at a dock~~ docked, one end of the ~~cable line~~ line is ~~wound~~ belayed to around the ~~vertical rods of a cleat~~ on board and ~~tightly tied up~~, while the other end of the ~~cable line~~ line is ~~fixed~~ cleated at the dock, thereby firmly tying making fast the boat to prevent it from slipping its mooring and drifting away ~~from the dock~~.

However, ~~because existent~~ currently available conventional cleats ~~for boat are projective protrude from and fixed on~~ the surface of the boat deck, or any other surface on which such cleats are fixedly mounted; The consequent problems are that the horn cleats of the prior art ~~they~~ not only

~~occupy the space of the~~ take up some of the limited space on a boat deck, but
~~also may easily stumble careless people passing by to cause hazards~~ constitute
a safety hazard, potentially causing persons to trip, stumble, stub toes, injure
feet, and the like.

~~Besides, because~~ Furthermore, insofar as conventional cleats are fixed
~~projective objects protruding from on the deck, there is much limit to their~~ the
available and suitable installation positions are rather limited. They ~~can only be~~
are typically installed on the outer aspects of the deck periphery at the edge of
~~the boat body to avoid~~ stay as clear as possible of passageways ~~or activities~~
and similarly busy places.

Accordingly, ~~the present invention aims to propose~~ these and related
problems of conventional horn cleats of the prior art are substantially
overcome by a ~~eable-fixed~~ the retractable horn cleat device of the subject
invention for boat to effectively resolve the problems in the prior art .

SUMMARY OF THE INVENTION

~~The main~~ An important object of the present invention is to provide
a ~~eable-fixed~~ retractable horn cleat device , ~~which that~~ can be conveniently
~~unfolded when in~~ deployed for use and can then be conveniently ~~hidden~~ retracted
and stowed when not in use. , ~~hence having the advantage of not occupying space~~
~~and convenient use.~~

Another object of the present invention is to provide a ~~hidden cable~~ fixed retractable horn cleat device for boat, one which ~~can effectively prevent~~ minimizes the risk of people ~~passing by from stumbling to provide a high safety~~ eable fixed device tripping, falling and otherwise being injured by a cleat.

Another object of the present invention is to provide a ~~eable fixed~~ retractable horn cleat device, which can be installed at any convenient place because of its ~~movable hidden~~ retractable concealable structure.

To achieve the above ~~objects~~ goals, the retractable horn cleat device is comprised of ~~comprises~~ a seat body, ~~eable fixed~~ a ~~movable~~ retractable handle, two ~~elastic~~ biasing components, a driving plate, and a coupling member. The seat body has a receiving cavity inside. The ~~movable~~ retractable handle longitudinally connects onto the seat body, and can slide up and down upon the seat body in which the handle's two vertical rods are telescopingly received. The ~~elastic~~ biasing components are disposed in the sliding direction between the ~~movable~~ vertical rods of the retractable handle and the seat body.

The driving plate is disposed in the receiving cavity of the seat body. The driving plate ~~has~~ is formed with a longitudinal track that has ~~substantially~~ two substantially V-shaped ~~part~~ sections. The coupling member is ~~fixedly fastened~~ connected to the ~~movable~~ retractable handle and slidingly coupled to the track at the driving plate and adapted to ~~guide~~ constrain the vertical movement of the

~~movable~~ retractable handle along the track and to selectively lock the ~~movable~~ retractable handle ~~between in either~~ the ~~extended~~ unretracted operative position and ~~or~~ the retracted ~~received~~ non-operative position.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a ~~structure diagram~~ front view of a conventional ~~eable-fixed~~ horn cleat device;

FIG. 2 is a ~~diagram~~ perspective view of a ~~eable-fixed~~ retractable horn cleat device according to the present invention;

FIG. 3 is a front sectional ~~sectional~~ assembly view of the ~~eable-fixed~~ retractable horn cleat device according to the present invention;

FIG. 4 is a side sectional ~~sectional~~ view of FIG. 3 ~~when rotated horizontally through 90°~~;

FIG. 5 is a ~~plain~~ an isolated schematic view of the driving plate for the ~~eable-fixed~~ retractable horn cleat device ~~according to~~ of the present invention;

FIG. 6 is a ~~plain~~ an isolated schematic view of the coupling ~~block~~ member of for the ~~eable-fixed~~ retractable horn cleat device ~~according to~~ of the present invention;

FIG. 7 is ~~another sectional~~ a front sectional view of the present invention, showing the ~~movable~~ retractable handle received inside the seat body;

FIG. 8 is a ~~sectional~~ side sectional view of FIG. 7 ~~when rotated horizontally through 90°~~ the subject retractable horn cleat;

FIGS. 9(a) ~ ~~to~~ 9(g) are ~~continuous drawings explaining a series of illustrative schematic views of the sequential~~ action of the coupling member and the block relative to the track of the driving plate ~~when as the movable retractable handle moved moves~~ from the ~~received retracted~~ non-operative position to the extended unretracted operative position;

FIGS. 10(a) ~ ~~to~~ 10(e) are ~~continuous drawings explaining a series of illustrative schematic views of the sequential~~ action of the coupling member and the block relative to the track of the driving plate when the ~~movable retractable handle is~~ moved from the ~~extended unretracted~~ operative position to the ~~received retracted~~ non-operative position.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

As shown in FIGs. 2 and 3, a ~~eable fixed~~ retractable horn cleat device comprises a seat body 20 having a receiving cavity 21 therein. A ~~fillister~~ recess 23 is further provided at the inside top of the receiving cavity 21. Two longitudinal ~~vertical~~ holes 22 are vertically disposed in the seat body 20 at two sides of the receiving cavity 21.

A ~~movable retractable~~ handle 24 longitudinally connects to the seat body 20 in which the handle's two vertical rods are telescopingly received , and

can ~~be slid~~ slide up and down on the seat body 20. Two ~~elastic~~ biasing components, usually being springs 26, are disposed in the sliding direction between the ~~movable~~ the pair of vertical rods of the retractable handle 24 and the seat body 20.

The ~~movable~~ retractable handle 24 comprises a transverse rod 28 and two vertical rods 30 ~~connected below~~ fixedly attached to the inferior aspect of the transverse rod 28. ~~And a~~ A ~~fixing rod~~ cross-bar 32 is transversely connected between the two vertical rods 30. ~~And a~~ A square block 34 ~~is provided around~~ through which the fixing rod cross-bar 32 passes is pivotally connected to the coupling member 44. The square block 34 ~~is~~ has a form corresponding to the ~~fillister~~ recess 23 of the receiving cavity 21 in which it is receivedly seated when the retractable handle is in the unretracted configuration.

The ~~movable~~ retractable handle 24 ~~uses~~ has the two vertical rods 30 ~~to that~~ connect to the upper aspects of the springs 26 ~~so as to be~~ that are disposed in the sliding direction in the vertical holes 22 of the seat body 20. A slidable connection is thus formed between the ~~movable~~ retractable handle 24 and the seat body 20.

A groove 36 is ~~disposed~~ formed at the top of the seat body 20 corresponding to the position exactly below the transverse rod 28 of the ~~movable~~

retractable handle 24 ~~so as~~ and adapted to receive and ~~hide~~ conceal the transverse rod 28. ~~Wherein, because there~~ therein, is a

A ~~fillister~~ recess 23 is provided at the inside top of the receiving cavity 21; and adapted so that the upper part of the ~~bulging square~~ block 34 ~~of~~ connected to the fixing rod cross-bar 32 ~~will be~~ is seated contained in the ~~fillister~~ recess 23 ~~while when~~ the ~~fixing rod cross-bar~~ 32 ~~moves~~ is moved upward and makes contact with the top of the receiving cavity 21.

A driving ~~piece~~ plate 40 is disposed in the receiving cavity 21 of the seat body 20. Referring to As may be seen in FIG. 4, ~~which is a sectional view of~~ ~~FIG. 3 when rotated horizontally through 90°~~, the driving plate 40 ~~is defined~~ has a longitudinal track 42 formed therein. As illustrated in FIG. 5, the track 42 comprises a longitudinally extended deep groove 422, and a ~~shadow~~ shallow groove, ~~which~~ The track is formed ~~of~~ with an ~~invertedly disposed~~ inverted-U- shaped upper positioning section 428 corresponding in proximity to the upper part of the center groove 422, and a substantially V-shaped lower positioning section 424 oriented downwardly ~~extended from one end of~~ the upper positioning section 428 corresponding in proximity to the left side of the lower part of the center groove 422, ~~and a~~ A substantially V-shaped lower guide section 426 is oriented upwardly ~~extended~~ from one end of the lower positioning section 424 corresponding in proximity to the right side of the lower part of the center groove

422 and ~~connected to~~ in continuity with the other end of the upper positioning section 428.

~~Referring to FIG. 6 simultaneously,~~ a A coupling member 44 is composed of a guide disk 442 and a butterfly control block 444 pivotally mounted thereon, as may be seen in Fig. 6. One side of the coupling member 44 is ~~fixedly fastened~~ connected to the square block 34 ~~of~~ through which passes the ~~fixing rod~~ cross-bar 32, and the other side is slidingly coupled to the center groove 422 of the track 42 and thereby adapted to guide constrain the vertical movement of the ~~movable~~ retractable handle 24 along the track 42, ~~and a~~

A butterfly control block 444 fastened pivotally ~~with~~ to the guide disk 442 and is adapted to control movement and positioning of the coupling member 44 in the track 42. The butterfly control block 444 can be moved vertically along the center groove 422 only when the two opposite long sides of the butterfly control block 444 are maintained in parallel orientation relative to the upper positioning section 428.

When ~~the a~~ user ~~pressed~~ presses the ~~movable~~ retractable handle 24 downwards from the ~~extended~~ unretracted operative position to the ~~received~~ retracted non-operative position, the butterfly control block 444 is stopped in the lower positioning section 424 to ~~hold~~ securely maintain the ~~movable~~ retractable handle 24 in the ~~received~~ retracted non-operative position. When ~~the a~~ user ~~pressed~~ then

presses the ~~movable~~ retractable handle 24 again, the butterfly control block 444 is disengaged from the lower positioning section 424 and is moved along the lower guide section 426 into the upper positioning section 428 (due to the upward pressure from each of the biasing compression spring springs 26) to hold the ~~movable~~ retractable handle 24 in the ~~extended~~ unretracted operative position.

In the above-mentioned structure, the ~~fixing rod~~ cross-bar 32 is formed substantially as a cylinder that is connectedly seated at each of its ends in a receiving space formed in each of the vertical rods 42. ~~, so the setting of the square block 34 is capable of increasing the combination area of the coupling member 44 with the fixing rod 32 for increasing the stability of the combination. Further more, because there is a fillister recess 23 provided at the inside top of the receiving cavity21 cavity 21, the square~~ The block 34 bulging out of surrounding the fixing rod cross-bar 32 that passes transversely therethrough will be is contained in the fillister recess 23 while when a user pulls the movable retractable handle 24 upward to make causes the fixing rod cross-bar 32 to move upward and contact until upward excursion of the cross-bar is stopped by its contact with the top of the receiving cavity 21. The bearing is consists of the square block 34 and the fixing rod cross-bar 32 but not merely the bulging square block 34, so as that with the cable fixed combined area of the block 34 and the cross-bar 32 the retractable horn cleat device could bear can resist stronger pulling force forces, as when used for fixing cables securing lines .

As shown in FIGS. 7 and 8, the ~~movable~~ retractable handle 24 of the ~~eable fixed~~ retractable horn cleat device is usually in the ~~hidden state~~ retracted or stowed condition. ~~And at this moment, the state a configuration~~ of the coupling block 44 ~~is as shown in FIG. 9(a)~~. The movement of the butterfly control block 444 along the track is stopped in the lower positioning section 424 to ~~hold~~ maintain the coupling member 44 and block ~~34~~ 44 in the lower positioning section 424.

When preparing to belay a cable line ~~is to be wound and tied up~~, it is only necessary to press the ~~movable~~ retractable handle 24 downwards ~~with the hand~~. After the ~~movable~~ retractable handle 24 transfers the external force to the coupling member 44, as shown in FIG. 9(b), the point C of the butterfly control block 444 is forced into contact with a ~~part~~ section of the lower guide section 426, thereby causing the butterfly control block 444 to be rotated counter-clockwise to the ~~status~~ configuration shown in FIG. 9(c).

~~When continuously~~ With sustained pressing on the ~~movable~~ retractable handle 24, the coupling member 44 and the block 44 ~~34 is moved~~ move to the bottom end of the center groove 422. At this time, the butterfly control block 444 is forced against a ~~part~~ section of the lower guide section 426 to rotate counter-clockwise ~~continuously~~ to the ~~status~~ configuration shown in FIG. 9(d). ~~When released the~~ Upon releasing pressure ~~hand~~ from the ~~movable~~ retractable handle 24, ~~at this time~~, the compression spring springs 26 ~~forces~~ bias the movable

handle 24 vertically upwards as shown in FIG. 9(e), ~~and the~~ The butterfly control block 444 is then concomitantly forced against a part of the lower positioning section 424 to rotate counter-clockwise ~~continuously~~ to the ~~status~~ configuration shown in FIG. 9(f), enabling the coupling block 44 to ~~be moved~~ move to the top end of the track 42 as shown in FIG. 9(g). At this time, the ~~movable~~ retractable handle 24 is extended out from the seat body 20, as shown in FIGS. 3 and 4. This is the unfolded, unretracted, or unstowed state.

When a user no longer needs ~~not to tie~~ belay a line cable, ~~he applies~~ a vertical downward ~~external~~ force is applied to the ~~movable~~ retractable handle 24. Similarly, during a downward stroke of the ~~movable~~ retractable handle 24, the coupling member 44 and the block 44 ~~34 is are~~ moved from the upper limit position as shown in FIG. 10(a) toward the position shown in FIG. 10(b). When ~~reached~~ the position shown in FIG. 10(b) is reached, ~~the point~~ section B of the butterfly control block 444 is forced against a part of the lower guide section 426, thereby causing the butterfly control block 444 to rotate counter-clockwise as shown in FIG. 10(c).

When pressure on the retractable handle 24 is released, ~~the hand~~ from the movable ~~movable handle 24 at this time~~, the biasing components 26, which in the preferred embodiment are compression spring springs 26, immediately ~~forces~~ force the ~~movable~~ retractable handle 24 upwards, ~~thereby~~ causing This causes the butterfly control block 444 to ~~be forced~~ move against a

part of the lower positioning section 424 as shown in FIG. 10(d) and then ~~rotated~~ rotate counter-clockwise ~~till the~~ until point C is stopped at the lower positioning section 424 as shown in FIG. 10(e), ~~and therefore~~ at which point the ~~movable~~ retractable handle 24 is ~~hidden~~ concealedly housed in the seat body 20. ~~Thereby,~~ the ~~The~~ above ~~reciprocating~~ sequence of actions can be ~~continually~~ repeated as needed.

Although particular embodiments of the invention have been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention. Accordingly, the subject invention is not intended to be limited except as by the appended claims.